

### III. SURFACE WATER ASSESSMENT

#### G. WETLANDS

##### 1. Extent of Wetlands Resources

According to the Rhode Island Geographic Information System (RIGIS) data approximately 18.4% of the state area (127,721 acres) is wetland and deepwater habitat (Cowardin et al. 1979). There are approximately 92,536 acres of palustrine wetland, 17,518 acres of lacustrine wetland and deepwater habitat, 1839 acres classified as riverine, and 15,827 acres of marine/estuarine wetland. Palustrine wetlands represent 13.3% of the State's surface area; lacustrine areas represent 2.5%; riverine areas represent 0.3% and marine/estuarine areas represent 2.3% of Rhode Island's area. These figures do not include the areas of Narragansett Bay and the Pawcatuck River Estuary. Wetland classes and their approximate acreages are listed in Table 3G-1. The most abundant wetland type in Rhode Island is palustrine forested wetland, commonly known as wooded swamp, dominated by red maple (*Acer rubrum*) or Atlantic white cedar (*Chamaecyparis thyoides*) trees.

Table 3G-1. Wetlands and Deepwater Habitats of Rhode Island (RIGIS 1988)

WETLAND TYPE	AREA (acres)
Riverine Nontidal Open Water.....	1832
Lacustrine Open Water.....	17,518
Palustrine Open Water.....	4481
Palustrine Emergent Wetland: Marsh/Wet Meadow.....	4341
Palustrine Emergent Wetland: Emergent Fen or Bog.....	229
Palustrine Scrub-Shrub Wetland: Shrub Swamp.....	9606
Palustrine Scrub-Shrub Wetland: Shrub Fen or Bog.....	2060
Palustrine Forested Wetland: Deciduous.....	60,694
Palustrine Forested Wetland: Coniferous.....	10,900
Palustrine Forested Wetland: Dead.....	225
Riverine Tidal Open Water.....	7.4
Estuarine Open Water.....	8175
Estuarine Emergent Wetland.....	4014
Estuarine Scrub-Shrub Wetland.....	93
Marine/Estuarine Rocky Shore.....	671
Marine/Estuarine Unconsolidated Shore.....	2874
TOTAL AREA.....	127,721 acres

Source: RIGIS. Data based on photo-interpretation of 1988 1:24,000 scale black and white aerial photographs, minimum map unit ¼ acre.

The above information represents approximate present wetland acreage. Information regarding historical acreage is not readily available.

The Narragansett Bay Estuary Program (NBEP) organized and implemented a collaborative mapping project to determine the abundance and distribution of coastal habitats in Narragansett Bay. True color aerial photographs taken in July 1996 were used to develop Geographic Information System (GIS) maps of eelgrass beds (*Zostera marina*), salt marshes, brackish marshes, beaches, rocky shores, tidal flats, and oyster reefs. The project area is defined as the tidal waters and nearshore areas north of a line extending from Pt. Judith, Narragansett to Sakonnet Point, Little Compton, R.I. A summary of the coastal habitat areas is presented in Table 3G-2. The digital habitat coverages are available through RIGIS. Data from this project have been applied to new studies to identify and prioritize habitat restoration sites and analyze coastal wetland trends in the Bay. Funding was provided by the DEM Aqua Fund, the NBEP, the U.S. EPA, and Save the Bay.

Table 3G-2. Summary of Coastal Habitats in Narragansett Bay (RI and MA)

HABITAT TYPE	AREA (acres)
Open Water	124,259.4
High Salt Marsh	2,708.7
Beaches	1,450.5
Rocky Shores	573.3
Tidal Flats	568.6
Low Salt Marsh	443.2
Brackish Marsh	427.6
High Scrub-Shrub Marsh	159.3
Eelgrass Beds	9946.3
Dunes	43.0
Artificial Jetties & Breakwaters	23.1
Oyster Reefs	9.0
Stream Beds	<u>3.5</u>

TOTAL AREA..... 130,815.0 acres

Source: *Report on the Analysis of True Color Aerial Photographs to Map Submerged Aquatic Vegetation and Coastal Resource Areas in Narragansett Bay Tidal Waters and Nearshore Areas, Rhode Island and Massachusetts*. Prepared by I. Huber, Natural Resources Assessment Group, University of Massachusetts, November 1999. Narragansett Bay Estuary Program Report No. 99-117.

The NBEP has also released a CD-ROM product entitled the *Narragansett Bay Coastal Wetland Restoration Analysis-Inventory of Potential Restoration Sites, Wetland Buffers, and Hardened Shorelines*, which applies a scientific GIS-based process which can be used to assess and prioritize coastal habitat restoration projects.

The NBEP has coordinated a similar cooperative mapping project in the South Shore, Little Compton and Block Island. True color aerial photographs

taken in June 1999 were used for the delineations. The project area encompasses the South Shore coastal ponds and watershed, the Pawcatuck River and Little Narragansett Bay, Little Compton coastal ponds and watershed, and Block Island tidal and near shore areas. Project partners include the U.S. Fish and Wildlife Service, University of Massachusetts, and the University of Rhode Island Environmental Data Center. The results from this project will be available to environmental organizations and local planning groups, and will be a central component of the statewide Habitat Restoration Plan. Funding is being provided by the R.I. Oil Spill Prevention, Administration, and Response Fund and EPA, Region 1.

Table 3G-3. Includes a summary of the project results.

Table 3G-3. Summary of Coastal Habitats in South Shore RI

HABITAT TYPE	AREA (acres)
Open Water	112,964.7
High Salt Marsh	1,425.6
Beaches	856.1
Rocky Shores	191.4
Tidal Flats	1,621.5
Low Salt Marsh	70.2
Brackish Marsh	293.8
High Scrub-Shrub Marsh and Brackish Scrub-shrub Marsh	113.6
Eelgrass Beds	570.3
Dunes	244.5
Artificial Jetties & Breakwaters	19.3
Oyster Reefs	4.4
Stream Beds	6.3
Pools	116.9
Coastal Bank	<u>84.6</u>

TOTAL AREA..... 118,583.2 acres

Source: *Report on the Analysis of True Color Aerial Photographs to Map Submerged Aquatic Vegetation, Coastal Wetlands, Deepwater Habitats and Coastal Features in Southern Rhode Island and Southeastern Connecticut.* Prepared by I. Huber, Natural Resources Assessment Group, University of Massachusetts, November 2003.

a. Freshwater Wetlands – State Regulations

Rhode Island was among the first states to pass legislation to protect freshwater wetlands. The Rhode Island Freshwater Wetlands Act (R.I.G.L. Sections 2-1-18 et seq.) was enacted in July 1971. The Act describes the public policy of the State of Rhode Island and Providence Plantations to preserve, protect, and restore the purity and integrity of the State's freshwater wetlands in order to protect the health, welfare and

general well being of the public. The Act and the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* describe the wetland functions and values that are regulated and protected: floodwater storage, groundwater recharge, wildlife habitat, recreation, and water quality improvement.

The Department of Environmental Management (DEM) and the Coastal Resources Management Council (CRMC) are both charged with regulation of freshwater wetlands, DEM through the Act and CRMC through R.I.G.L. Chap. 46-23-6. The DEM Office of Water Resources (OWR) Wetland Permitting Program and the Office of Compliance and Inspection Wetland Enforcement Program currently administer and enforce the Act and the *Rules and Regulations*. In general, approval is required for any activity that may alter the character of any freshwater wetland. Applicants are required to avoid and minimize all impacts to wetlands and no random, unnecessary or undesirable alteration of wetlands is permitted.

Freshwater wetlands in Rhode Island include: swamps, marshes, ponds, bogs, the area of land within 50 feet of these wetlands (perimeter wetland), 100-year floodplain; all rivers, streams, and intermittent streams; 100 foot and 200 foot riverbanks depending upon whether the associated flowing body of water is less than or greater than 10 feet in width, areas subject to flooding and storm flowage; any forested, shrub or emergent wetland; and special aquatic sites (vernal pools). In general, approval is required for any project or activity which would excavate, drain, fill, deposit material or effluent, divert flow into or out of, dike, dam, divert, change, add to or take from, or otherwise alter the character of any freshwater wetland. Exempt activities as specified by law or rule and carried out in a manner which is protective of wetland functions and values do not need a specific written approval. Certain projects including new farm roads, new farm ponds and drainage structures for agricultural purposes carried out by farmers are handled by DEM's Division of Agriculture. The Division of Agriculture coordinates the review and evaluation of such projects to ensure that such projects represent insignificant alterations to freshwater wetlands.

In January 2000, the DEM Director formed a Wetland Task Force which began a Department-wide effort to streamline the regulatory programs. The Wetland Task Force met throughout calendar year 2000 and concluded its work with the completion of the Final Report on March 21, 2001.

The Task Force investigated statutory, regulatory, policy, and administrative changes in order to streamline program operations, increase customer satisfaction and meet the mandates of the law. Task Force members represented a wide range of interests including federal, state and local government, the Governor's Office, the Legislature, builders,

realtors, consultants, nonprofit organizations, and scientists. Based on issues raised by the members, 10 working groups were formed who subsequently brought recommendations back to the full Task Force. The Department analyzed the recommendations and committed to moving forward with many program changes as described in the Final Report's executive summary.

Implementation of the Wetland Task Force recommendations has remained a high priority for DEM since 2001. With EPA Region 1 support and through the New England Interstate Water Pollution Control Commission (NEIWPCC), DEM obtained contractual assistance to implement both outreach and regulatory recommendations in a multi-year plan.

Rule amendments became effective Department-wide on January 1, 2001 in response to the uniform appeal statute (R.I.G.L. 42-17.7-9). The wetland revisions advise the regulated community that newly enacted times must be followed for appeals of permits, applications, and enforcement actions.

Other *Rule* amendments (dated August 2001) went into effect on September 19, 2001. Included are definitions and reduced fees for wildlife habitat and water quality improvement projects, as well as reduced fees for land reuse and redevelopment projects. In addition, private property owners are now eligible to apply for permits for emergency alterations. The amendments allow a permit to be modified if the proposed project change involves increased disturbance into already disturbed wetland. Conversely, a permit modification will not be approved if there is a proposed increase in disturbance into areas that were not previously evaluated by DEM as part of the initial application.

More notably, the amendments clarify whether DEM or the Coastal Resources Management Council (CRMC) will review freshwater wetland projects that are on, or that straddle, the jurisdictional boundary that was implemented in 1999. In conjunction with the *Rule* amendments, DEM and CRMC revised the freshwater wetland boundary to further reduce jurisdictional overlap at 3 tidal rivers so that the freshwater boundary coincides with the coastal program boundary. These agencies also finalized and executed a Memorandum of Agreement detailing interagency coordination and operations.

DEM is now completing a draft revision of the wetland rules which, while primarily structural and organizational, will include added provisions aimed at improving the application process. The next step will be finalization of a draft, public notice and promulgation.

DEM and CRMC renegotiated the Programmatic General Permit (PGP) with the Army Corps of Engineers, New England District and with

other federal agencies in 2001. The PGP facilitates a coordinated federal and state review of applications involving deposition of dredged or fill material in wetlands. The PGP enables applicants to submit a single application to the State agency to obtain both State and federal wetland permits. The new 5-year agreement became effective in February of 2002. No substantive changes were made to the freshwater aspect of the PGP.

During calendar years 2001-2003, the DEM Wetlands Permitting Program issued 338,314 and 326 new permits respectively. In each of these years, 95% of the permits were for projects involving insignificant impacts to regulated wetlands; with a total of 42 applications requiring formal permits for significant alterations. There were four emergency permit issued during this 3-year period. The greatest number of new permits was issued for residential development, including new residential lots, modifications to already developed lots, residential subdivisions, and apartments or condominiums. Permits for residential development represented 53% of the permits issued in 2001-2002 and jumped to 60% in 2003.

During calendar years 2001-2003 the Wetland Compliance Program received 1,539 wetland-related complaints and issued 325 actions, e.g., warning letters, Notices of Intent to Enforce, and Notices of Violation. The Compliance Program determined 474 or 31% of the complaints to be unfounded. A total of 2,766 inspections were completed during this period. A large majority of enforcement actions are resolved without the need for adjudication or court action. Besides seeking informal resolution of all enforcement actions, the DEM uses alternative dispute resolution to resolve violations. When necessary, cases are referred to the Attorney General's Office for prosecution.

During 2001, one of the major compliance accomplishments was the resolution of several longstanding and large violations through major restorations. (OCI Annual Accomplishment Summary, 2001). Again in 2002, OCI settled several major cases, one included 14 separate violations of clearing, grading, filling, and excavation by a private developer in Narragansett. Twenty-two thousand ft<sup>2</sup> of Forested, Shrub, and Perimeter wetland were impacted. The developer was required to remove all fill, create wetlands, replant and restore wetlands and pay a \$30,000 penalty. (OCI Annual Accomplishment Summary, 2002).

#### b. Coastal Wetlands – State Regulations

Coastal wetlands in Rhode Island are regulated by the CRMC through the Coastal Resources Management Program (CRMP) and Special Area Management Plans (SAMP). The Rhode Island General Assembly established the Council in 1971 for the purpose of managing the coastal

resources of the State, including the barrier beaches of the southern coast, Rhode Island and Block Island Sounds, and Narragansett Bay. Activities proposed in Rhode Island's tidal waters, on shorelines abutting tidal waters and coastal ponds, as well as activities within 200-feet of coastal features (beaches, dunes, wetlands, cliffs, bluffs, embankments, rocky shores, and manmade shorelines) require a CRMC approval (Assent). A variety of industrial activities proposed inland of the coastal zone that may impact coastal resources may also require a CRMC Assent. Projects that are proposed in the poorly flushed estuaries of the Narrow River and the south shore coastal ponds and that meet given size thresholds trigger a SAMP review by CRMC.

There are approximately 3700 acres of salt marsh in Rhode Island, approximately 10% of which are considered fringe marshes less than 5 yards wide (CRMP). Approximately 90% of Rhode Island's salt marshes abut tidal waters designated Type 1 (Conservation) and Type 2 (Low Intensity Uses) by the CRMP. CRMP policies and regulations governing Type 1 areas prohibit alteration of coastal wetlands, while policies for Type 2 marshes allow only minimal alterations in association with dock construction and other low-intensity uses. CRMC staff report that the policies are generally effective in avoiding further loss of coastal wetlands. Specific figures of wetland loss are not available due to data system constraints.

c. US Army Corps of Engineers (ACOE) - Programmatic General Permit (PGP Process)

As a result of cooperative efforts between the DEM OWR, CRMC and the Army Corps of Engineers (ACOE), a programmatic general permit (PGP) process was implemented in Rhode Island in February 1997. This process replaced the Nationwide Permits Process previously implemented by ACOE in accordance with Section 404 of the Federal Clean Water Act. Under the PGP, projects are categorized as I or II. Category I projects represent minor impacts to State waters and are non-reporting to the ACOE. Category II projects represent more than minor impacts to State waters and must be reviewed at a monthly screening meeting where appropriate State and Federal agencies review the project. If the project is determined to meet all appropriate state and federal regulations, agencies can determine compliance at the meetings. For both category I and II projects, the appropriate State agency, either the DEM, Freshwater Wetlands Program, or the CRMC, can issue the ACOE's PGP, along with the appropriate state permit. For projects that fall under the ACOE Individual Permit process, the ACOE maintains its established permitting process. To date, the process has successfully streamlined the multi-agency permitting process and facilitating coordination.

## 2. Development and Enforcement of Wetland Water Quality Standards

### a. Wetlands Water Quality Standards

The term "waters of the state" include both freshwater and coastal wetlands. Accordingly the Surface Water Quality Regulations including the surface water classifications, standards and criteria, (Table 3G-4) pertain to all wetlands.

TABLE 3G-4. Development of State Wetland Water Quality Standards

	In Place	Under Development	Proposed
Use Classification	X		
Narrative Biocriteria	X		
Numeric Biocriteria			
Antidegradation	X		
Implementation Method	Section 401 State Wetland Permit		

Biomonitoring or bioassessment is a method by which scientists study the natural systems to determine their ecological health. Currently, Rhode Island uses biomonitoring to assess the health of flowing rivers and streams using macroinvertebrate data as an ecological indicator. With support of the EPA, Region 1, and with NEIWPCC assistance, the Wetlands Protection Program is developing a freshwater wetland biomonitoring plan for the state. Currently there is no routine wetland monitoring in RI, but some research based monitoring. There is a growing need to monitor state wetlands for complex problems, such as invasive species, water withdrawals, buffer alterations, and results of restoration. The wetland biomonitoring plan will be one element of an overall water-monitoring plan, recently completed in draft.

During development of the wetland biomonitoring plan, DEM will assess available data, identify and prioritize data needs, identify methods and protocols, and provide estimates of resources needed for implementation. When this project is completed it will provide DEM with an outline of the steps that will be necessary to begin implementation of a biological assessment program for wetlands. Different approaches, from landscape scale to site specific assessments are being evaluated for applicability towards meeting the priority data needs.

The northeastern states have been selected by EPA headquarters to test and implement wetland bioassessment projects through the New England Bioassessment Wetland Working Group (NEBAWWG). Rhode Island participates in this working group.



b. Section 401 Water Quality Certification Program

OWR enforces the water quality standards through the Water Quality Certification program as provided for in the Rhode Island Water Quality Regulations for Water Pollution Control. Certain proposed activities require an applicant to obtain approval from the Water Quality Certification Program. Such approval certifies that the proposed project does not violate the State Water Quality Regulations. Rule 13 of the State Water Quality Regulations defines these activities to include federal projects, as defined in Section 401 of the Clean Water Act, and certain projects located wholly or partly in the coastal zone. These projects include dredging and possibly dredged material disposal, filling of Waters of the State, site disturbances which have the potential to contribute increased pollutants to a Water of the State, (specifically residential development of six or more units, any commercial, industrial, state, or municipal land development, or any project which disturbs five or more acres), marina construction or expansion, flow alterations, Harbor Management Plans, and point source discharges. In addition to Rule 13 requirements, a Water Quality compliance review or Water Quality Certification is required for certain proposed activities associated with inland waters that fall under the jurisdiction of the Freshwater Wetlands Program and/or the ACOE PGP process. In 2002 the OWR issued 69 WQC determinations in association with the above described review processes. In 2003, the OWR issued 118 WQC determinations.

The WQC evaluation is performed using the Antidegradation Policy provisions of the Water Quality Regulations as guidance to determine compliance with these regulations. The Antidegradation Policy is based on the Federal Antidegradation Policy requirements (40 CFR, 131.12) and adopted under the authority of Chapter 46-12, 42-17.1, and 42-35 of the General Laws of Rhode Island, as amended. The provisions of the state Antidegradation Policy have as their objective the maintenance and protection of various levels of water quality and uses. This policy consists of three tiers of water quality protection; tiers 1, 2, and 3. Antidegradation is one of the minimum elements required in state water quality standards and applies to any new or increased activity that could lower water quality. Antidegradation requires that all existing uses are to be maintained in State waters. Tier 3 criteria reserved for Special Resource Protection Waters (SRPWs). Tier 3 prohibits any permanent lowering of water quality in high quality waters designated as Outstanding Natural Resource Waters. This policy has been referenced as grounds to denial and approval of proposed alterations to the State's freshwater or coastal wetlands.

3. Integrity of Wetlands

a. Freshwater Wetlands Loss and Restoration

Historic freshwater wetland loss in Rhode Island, as reported in U.S. Fish and Wildlife Service publication *Wetlands Loss in the United States 1780's to 1980's* (Dahl 1990) was estimated to be 37%, although the methodology used to generate this figure is flawed (F. Golet, University of Rhode Island Department of Natural Resources Science; pers. comm., 1999). In the Providence metropolitan area, major historic wetland losses can be attributed to urbanization. In the more rural parts of the State, transportation projects and residential development have been the primary causes of wetland loss both historically and in more recent times. Parkhurst (1977) found that highway construction and residential development caused the greatest amount of wetland loss in South Kingstown between the years 1939 and 1972. Wetland loss due to agriculture in Rhode Island has been relatively minor compared to other parts of the country.

In addition to wetland loss there has historically been conversion of wetlands from one class to another, with the construction of dams being the primary mechanism. The construction of dams has resulted in the conversion of palustrine vegetated wetlands and riverine wetlands to open water and deepwater habitats. Over time, areas of palustrine vegetated wetland have developed at the edges of the impoundments.

Computerized tracking of physical losses and gains went on line in January 1998. Data collected for calendar years 1999 and 2000 indicate that permitted freshwater wetland losses were limited to 0.5 acres net loss in 1999 and 2.1 acres net loss in 2000. During 2002-2003, the Office of Water Resources, in coordination with the Office of Compliance and Inspection increased the inspections of properties with wetland permits to make sure property owners were in compliance. Permitting staff conducted 235 compliance inspections and OCI added 147.

For the period 2001-2003, the total permitted wetland loss in tidal and non-tidal areas in Rhode Island was logged as 4.72 acres by the ACOE-New England Division. Most losses resulted from unavoidable crossings of wetlands to otherwise developable land.

Based upon enforcement activities, the Wetlands Compliance Program determined that during 2000, there was 17.1 acres of unauthorized biological wetland alteration; and 10.8 acres of perimeter wetland, riverbank wetland, and floodplain were illegally altered during the same period. During 2001-2003, the unauthorized losses for wetlands and perimeter areas were 22.6 acres and 30.6 acres respectively, for a total of 53.2 acres. It is DEM policy to pursue restoration wherever feasible. As a result of enforcement activities, during the 2001-2003 period a total of 8.6 acres of wetland and 13.3 acres of buffer areas were reported restored. Note that these figures reflect restorations completed in 2001-2003 that may have been identified in prior years.

With the assistance of an EPA 104(b)3 wetlands grant DEM and the University of Rhode Island completed a two phase project to develop and apply methods for the identification and prioritization of proactive freshwater wetlands restoration opportunities. In Phase 1, methods were developed and applied in 2 test areas in urban and rural parts of the state. In Phase 2, the methods were applied throughout the Woonasquatucket River watershed. One hundred forty six (146) potentially destroyed wetlands and 249 areas where upland buffer vegetation were identified in the watershed. A select number of sites were carried through a feasibility phase.

The project resulted in development of the *Wetland Restoration Plan for the Woonasquatucket River Watershed* (Golet, et al, 2002), which was completed in November 2002 and the related website which debuted in January of 2003. DEM, EPA, and URI in partnership with the Woonasquatucket River Watershed Council and officials from the six watershed cities and towns collaborated on the project. This study identified 77 potential wetland restoration sites and 239 potential buffer restoration sites. The sites were prioritized based on the ability, if restored, to perform one or more of the following wetland functions: flood abatement, water quality improvement, wildlife habitat, fish habitat, and heritage. Each site was ranked on its ability to perform each function and/or multiple functions. The website displays the *Wetland Restoration Plan*, databases of potential wetland and buffer restoration sites, and interactive mapping of the sites. The website can be viewed at: <http://www.state.ri.us/dem/programs/benviron/water/wetlands/wetplan.htm>.

Implementation of the Plan is being led by the Woonasquatucket Watershed Council and the Woonasquatucket Watershed Restoration Team, chaired by the EPA American Heritage River Navigator, along with other federal, state, and local representatives. The team has met with town planners and Conservation Commission members to plan future projects. A huge challenge facing the team is the fact the over 90 percent of the potential wetland and buffer restoration sites are on private property.

Several restoration projects on public properties moved forward during 2002 and 2003 including Mountindale Reservoir and Whipple Field; both located in Smithfield. The Woonasquatucket River Watershed Council was awarded a grant from the *Partnership for Narragansett Bay* for wetland and buffer restoration at Smithfield Department of Public Works, adjacent to the Mountindale Reservoir. The restored wetland and buffer area will improve wetland functions and also provide important educational opportunities. There are three schools within one mile of this restoration site and the project is intended to be a demonstration for wetland restoration within the watershed. Both of these projects will contribute to the development of the freshwater wetland component of a statewide Habitat Restoration Plan.

A large showcase wetland enhancement and restoration project was completed in July of 2003 at the site of the former Lonsdale Drive-In, along the Blackstone River in Lincoln. Funding for the project came primarily from the Army Corps of Engineers, with additional monies from DEM, the Rhode Island Corporate Wetlands Restoration Partnership, and the Rhode Island Habitat Restoration Team.

The Lonsdale site was originally a floodplain, which was developed as an outdoor drive-in movie theater in the early 1950's. Approximately 20 acres of the 37-acre site were paved to construct the drive-in that eventually closed in the early 1980's. In 1998, the State of Rhode Island purchased the site with the intention of restoring wetlands and riparian habitat. The restored Lonsdale site now includes a 7-acre wetland complex of forested, scrub/shrub, wet meadow, emergent and open water wetland, in addition to almost 10 acres of restored upland grassy area. (McGinn, personal communication, 5/4/04).

b. Coastal Wetlands Loss and Restoration

It is generally accepted that the historical loss of coastal wetlands in Rhode Island has been substantial. As a result, in recent years, there has been growing interest in facilitating coastal habitat restoration. The most significant project to date has been a multi-year and multi-agency, 1.9 million dollar salt marsh restoration at the DEM-owned Galilee Bird Sanctuary in Narragansett that resulted in the restoration of 84 acres of salt marsh and 14 acres of new open tidal channels. More recently, numerous partners have teamed to complete coastal wetland restoration projects at Common Fence Point, Portsmouth; Sachusett Point National Wildlife Refuge, Middletown; and Mosquito Beach, New Shoreham.

The DEM NBEP coordinated a cooperative project funded by DEM's Aqua Fund Program to identify coastal wetland sites for potential restoration in the vicinity of Narragansett Bay. The results of the recently completed Coastal Habitat Inventory for Narragansett Bay have provided the foundation for this work. Using aerial photo interpretation and field work, potential coastal wetland restoration sites were identified and mapped. The GIS maps and database will facilitate the efforts of decision-makers to locate and prioritize wetlands that are practical and feasible to restore. Project partners include the U.S. Fish and Wildlife Service, University of Massachusetts, University of Rhode Island Environmental Data Center, and Save the Bay. Another project funded by the U.S. EPA will provide an historical assessment of changes or trends in coastal wetlands and their buffers between the 1950's and 1990's, and back to the 1930's in selected sites. Digital information from these projects will be available through RIGIS.

In July 2000, the DEM NBEP embarked on a two-year partnership project with CRMC, Save the Bay, and the NOAA Coastal Services Center in Charleston, S.C to develop the Coastal Habitat Restoration Plan and Information System. This resulted in the development of a Web-based tool to promote and facilitate restoration of Rhode Island's coastal habitats. The System combines information on coastal habitats and restoration sites with a decision-making model, allowing users to select and prioritize coastal habitat restoration projects. The intended audience

includes state and local agencies, community groups, municipalities, academic institutions, policy-makers and the public. The system was used to develop a statewide coastal habitat restoration plan for Rhode Island and, it is expected, will enhance the state's capacity for undertaking restoration at all scales. It is anticipated that, in addition to improving restoration planning and capacity in Rhode Island, the system can be applied to other geographic areas with an interest in promoting stakeholder involvement in regional restoration planning.

In 200x, the legislature acted to create the Coastal and Estuary Habitat Restoration Program and Trust Fund. The purpose of the program is to facilitate the design, planning, construction and monitoring of coastal and estuarine restoration projects by providing grants and technical assistance. The program is administered by CRMC with technical support from the RI Habitat Restoration Team.

In 2002, grants totaling about \$250,000 supported the following restoration projects:

1. Lonsdale Drive-in Wetlands Restoration, Lincoln– RIDEM, \$153,000
2. Field's Point Marsh Restoration, Providence– Save The Bay, \$24,000
3. Narragansett Bay Seagrass Restoration – Save The Bay/URI-GSO, \$29,000
4. Stillhouse Cove Salt Marsh Restoration - City of Cranston, \$7,000
5. Palmer Avenue Salt Marsh Restoration – Warren Land Conservation Trust, \$14,000
6. Mussachuck Creek Salt Marsh and Anadromous Fish Habitat Restoration –(self-regulating tide gate) – Barrington, RI Country Club, \$9,000
7. Napatree Dunes Restoration, Westerly – NOAA/Watch Hill Fire District, \$6,000

The Program is currently soliciting for new grant requests and expects to obligate a similar amount of funds in the current state fiscal year (FY2005).

#### 4. Additional Wetland Protection Activities

##### a. Protection of Wetlands Via Acquisition

An additional means of protecting wetlands is through acquisition. The DEM Office of Planning and Development (P&D) includes wetland protection within its coordination of state land acquisition programs and open space grants. The DEM Office of Planning and Development Land Acquisition Program acquired 47 new properties totaling 3,598 acres during 2002-2003 and approximately 35% of the area is considered wetland. The program, working with partners, uses state bond funds

supplemented by other sources such as U.S. Fish & Wildlife funded, North American Waterfowl Conservation Act grants.

b. Local Protection Projects

Several EPA-sponsored local protection grant projects have been completed. Since completion, several Towns have continued to use the project results for implementation of wetland protection, conservation and restoration.

- *Town of North Kingstown – Wetlands Action Plan*

The Town developed an action plan to protect wetlands in the community. The wetland mapping inventory has proved to be one of the most useful outcomes of the project (Cohen, personal communication, April 27, 2004). Many residents visit the planning office to view the maps as a preliminary step to see if their property would be suitable for a specific project. Also, as a result of the grant project, the Town has implemented a new, more extensive, ISDS setback of 150 feet and now also requires that all legal non-conforming lots and lots that cannot meet the ISDS setback to submit a denitrification system. The Town is also participating with URI in the Healthy Landscapes Program to discuss wetland buffers and stormwater mitigation with residents. One other result is the adoption of subdivision conservation guidelines.

- *The Nature Conservancy, Audubon Society of Rhode Island, and DEM - Conservation Plan for Tiverton and Little Compton*

The grant partnered The Nature Conservancy, the Audubon Society of Rhode Island, DEM, and local partners in the development of a Conservation Plan for wetland and other natural resource areas in Little Compton and Tiverton (Lundgren, personal communication, May 4, 2004). The plan has helped to focus the efforts of the two towns and combine efforts with local partners to look at big picture, watershed wide land conservation. As a result of the study, Little Compton also received a grant for a more in depth assessment of one of the priority tracts, Watson Reservoir, which is Newport's water supply. Overall, the plan coincided with many of the areas in which the Town and environmental groups were already working, but helped to amplify the importance of certain areas, such as Weetamoo Woods.

- *Town of Coventry - Wetland Restoration and Enhancement Demonstration Project at Sandy Bottom Road*

The grant partnered the Town of Coventry with the Rhode Island Association of Wetland Scientists (RIAWS) in the development of conceptual wetland restoration plans on a 20 acre property on Sandy Bottom Road that was acquired through a Natural Heritage Preservation Commission Open Space grant (Narkowitz, personal communication, May 4, 2004). After the completion of this plan, the Town received additional funding from the EPA, as well as grants from U.S. Fish and Wildlife.





c. Outreach and Education

Outreach continued to be an important focus during the reporting period. The majority of the outreach activities are in support of the regulatory program, in order to help explain and clarify the Rules and the application requirements. Other projects also support general wetland education, protection and restoration, many of which were a direct result of Task Force recommendations (2001).

The primary outreach project during this reporting period has been the ongoing development of the draft *Wetland Best Management Practices Manual*. The objective of the Manual is to provide a better understanding of acceptable and wetland-friendly designs and practices that can be used when designing a project for submittal to DEM. The draft Manual includes avoidance and minimization techniques for specific project design types as well as broad topics that are applicable to any project. This Manual is being developed with a DEM technical team in response to suggestions emanating from the Task Force.

Other publications completed during the reporting period include the following:

- Guidance for Dry Hydrant applicants, including fire districts and municipalities;
- A flyer that illustrates the importance of communication between developers, contractors, realtors, and new homeowners to ensure compliance with permit conditions and protection of wetlands;
- An illustrated *Wetland Functions and Values* brochure; and
- A *Wetlands are Worth It* flyer with contact information, a description of the Wetlands Program, and the reasons to protect wetlands.